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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,681	10/12/2004	Hajime Kitano	259279US0PCT	3860
22850	7590	10/18/2006	EXAMINER	
C. IRVIN MCCLELLAND OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MULLIS, JEFFREY C	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/509,681

Applicant(s)

KITANO ET AL.

Examiner

Jeffrey C. Mullis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

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The Finality of the Office action of 3-22-06 is hereby withdrawn in view of the following new grounds of rejection.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khandpur et al. (US 2006/0177652).

Khandpur et al. discloses a multilayer foam article (paragraph 11) containing a block copolymer having a conjugated diene block of molecular weight of 1000 to 500,000 and a styrenic block of molecular weight of 1,000 to 50,00 which may include those formed from alpha methyl styrene blocks (paragraph 23). Polymeric microspheres are added (abstract) including those which may contain polyacrylate or methacrylic acid esters and wherein the methacrylic esters are disclosed to include methyl methacrylate (paragraph 38). The amount of the microspheres is 0.1 to 50 parts by weight based on 100 parts of the polymer mixture (paragraph 40). The composition is required to contain polyarylene oxide although it may be present at a fairly minor level and as such the amounts of microsphere and block copolymer may substantially comprise the entire composition and the disclosed amounts may therefore be based substantially on these two materials.

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There are no examples in Khandpur et al. of compositions possessing all of applicants limitations in combination although the disclosure of patentees falls within the broad ambit of the claims in that by choosing from the ranges and species discloses to be useful by Khandpur et al. it is possible to arrive at applicants composition. Hence to arrive at applicants composition by selecting from the disclosure to Khandpur et al. would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results absent any showing of surprising or unexpected results.

The above reference was of course unavailable as of the FINAL rejection.

Claims 1, 4-10 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiiron (JP 11-246733) in view of Foss (US 3679776) or Zucchini (US005219961A) or Erickson et al (US006525142B1) or Chemical Marketing reporter. Hiiron discloses a composition containing a thermoplastic and a block copolymer having an aromatic block which may include AMS. Note the abstract. The thermoplastics include acrylates such as PMMA and methylmethacrylate-styrene copolymer at paragraph 17 and preferably the ratio of block copolymer to thermoplastic may be as high as 50:50 at paragraph 25, within the metes and bounds of the claims. Block copolymer molecular weights and aromatic monomer contents are disclosed at paragraphs 29 and 32 and are such as to meet the limitation of applicants' component "a". Plasticizers are disclosed in paragraph 50, although useful amounts are not. The

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compositions are useful in the automotive field at paragraph 54. The non aromatic blocks include dienes at paragraph 47.

Applicants claims are now limited to conjugated dienes while Tomoki does not specifically disclose that his dienes are conjugated.

Erickson discloses that butadiene is used as diene in a diene containing polymer due to low cost and availability (column 3, lines 13-20) while Foss at column 2, lines 43-46 has a similar disclosure for butadiene and isoprene as does Zucchini at column 4, lines 10-15.

Chemical Market Reporter indicates that butadiene is the cheapest polymerizable commodity petrochemical (see the last column).

Applicants laminates are not disclosed but applicants discussion at the paragraph at the top of page 9 of their specification admits that it was known at the time of the invention to use laminates in automotive parts. Hence to produce laminates from the composition of the reference would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in order to achieve the goal of patentees to produce article useful in the auto field absent any showing of surprising or unexpected results.

With re to the use of applicants amounts of plasticizer, applicants claims do not require plasticizer at all given that the plasticizer is recited to be present at a level of less than 0.5 parts based on a, b, and c. However to find the optimum or workable amount of plasticizer would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in that it requires only routine experimentation to fine the optimum or workable range of a result effective variable, absent any showing of

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surprising or unexpected results. There are no examples in the patent of compositions having the specific combination of limitations of applicants although such falls within the broad ambit of the patent. However, to choose applicants combination of materials from the patent would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of adequate results, absent any showing of surprising or unexpected results.

With re to use of butadiene or isoprene of the diene in the primary reference, to do so would have been obvious to a practitioner having an ordinary skill in the art at the time of the invention in the expectation of extending the advantages of the secondary reference to the primary reference such as low cost and availability absent any showing of surprising or unexpected results.

Applicant's arguments filed 7-12-06 have been fully considered but they are not persuasive.

Applicants argue that it is necessary to choose from a long list of resins to arrive at PMMA. The examiner does not agree as only 6 resins are present at paragraph 17 of Hiironaka. With re to molecular weight, paragraph 61 of Hiironaka discloses polydispersities of close to one and hence  $M_w$  and  $M_n$  are nearly the same. Patentees argue that the secondary references disclose different processes and products than the primary reference. However the disclosure of a secondary reference in a rejection under 35 USC 103 is necessarily always different than the primary reference relied upon. The test for obviousness is what those skilled in the art would conclude when viewing the

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combination of references relied upon. In the instant case those skilled in the art would conclude that a benefit of lower cost product would result from use of butadiene as monomer. The fact that butadiene is an exceptionally cheap monomer is immaterial to the question of what process the secondary reference discloses. It is not necessary to "ignore" the disclosure of the secondary references disclosed processes. The conclusion that butadiene is cheap would be unchanged irregardless of any disclosed process. In any case lest applicants renew their arguments re the type of process disclosed by the secondary references, the above Chemical Market Reporter reference is concerned only with cost and discloses that butadiene is the cheapest of all polymerizable commodity chemicals. Benefits are motivations for making a proposed modifications and the benefit of lower cost is a benefit that those of ordinary skill in the art would recognize whether or not picking and choosing from the disclosure of the primary reference were needed. With re to performance, the limitations of applicants claims are met by even a miniscule amount of butadiene and it is unlikely that a small amount of butadiene would spoil performance although use of any amount would lower cost somewhat. With re to claims 4-6, the block copolymer of Hiirio is elastomeric and would therefore appear to be elastomeric immaterial of the type of processing used and in any case similar characteristics can reasonably be assumed for similar compositions. With re to claims 7-10 Hiirio desires the formation of automotive products (see paragraph 54 of Hiirio which does not disclose the word "engine" but rather recites "automotive" and the knowledge of the prior art that formation of laminates may result in

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an automotive product meets the goal of Hiir of formation of the desired automotive parts.

Any inquiry concerning this communication should be directed to Jeffrey C. Mullis at telephone number 571 272 1075.

Jeffrey C. Mullis  
J Mullis  
Art Unit 1711

JCM

10-9-06

Jeffrey Mullis  
Primary Examiner  
Art Unit 1711

A handwritten signature in black ink, appearing to be 'JCM', is written below the printed name and title of Jeffrey Mullis.